

CONSTRUCTION ENGINEERING RESEARCH LAB (ARMY) CHAMPAIGN IL F/6 13/2
THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PER--ETC(U)
AUG 82 M MESSENGER, V SCARPETTA, C CORBIN
CERL-TR-N-133 NL

UNCLASSIFIED

NL

176
A.
A. 176

1986

END
DATE
FILMED
11.82
DTIC

construction
engineering
research
laboratory

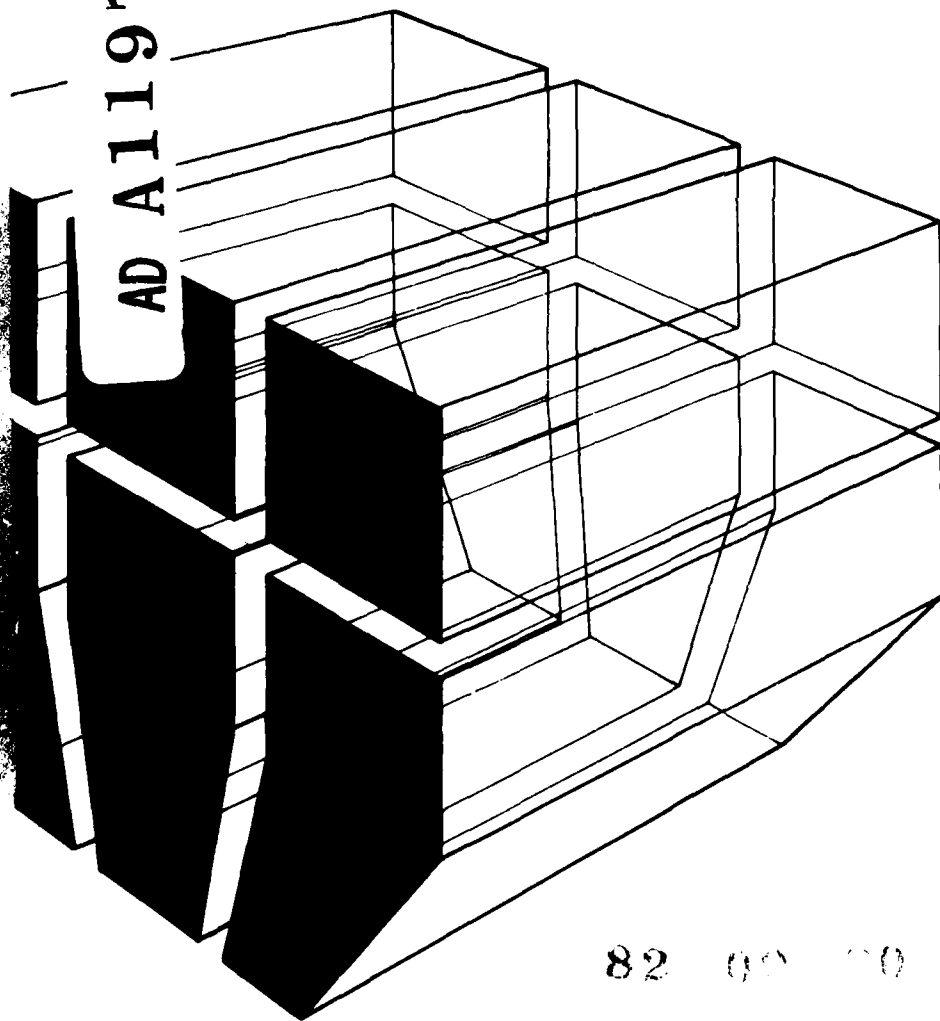


United States Army
Corps of Engineers
...Serving the Army
...Serving the Nation

TECHNICAL REPORT N-133
August 1982
Hazardous/Toxic Materials Management System

THE NATIONAL POLLUTANT DISCHARGE ELIMINATION
SYSTEM (NPDES) PERMIT MANAGEMENT SYSTEM:
PILOT SYSTEM DESCRIPTION

AD A119787



by
M. Messenger
V. Scarpetta
C. Corbin
J. Bandy
E. Smith
R. Webster

DTIC
SEP 30 1982
A

82 00 00 002



DTIC FILE COPY

Approved for public release; distribution unlimited.

The contents of this report are not to be used for advertising, publication, or promotional purposes. Citation of trade names does not constitute an official indorsement or approval of the use of such commercial products. The findings of this report are not to be construed as an official Department of the Army position, unless so designated by other authorized documents.

**DESTROY TH'S REPORT WHEN IT IS NO LONGER NEEDED
DO NOT RETURN IT TO THE ORIGINATOR**

REPORT DOCUMENTATION PAGE		READ INSTRUCTIONS BEFORE COMPLETING FORM
1. REPORT NUMBER CERL-TR-N-133	2. GOVT ACCESSION NO. AD-A22	3. RECIPIENT'S CATALOG NUMBER 9787
4. TITLE (and Subtitle) THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT MANAGEMENT SYSTEM: PILOT SYSTEM DESCRIPTION		5. TYPE OF REPORT & PERIOD COVERED FINAL
7. AUTHOR(s) M. Messenger J. Bandy V. Scarpetta E. Smith C. Corbin R. Webster		6. PERFORMING ORG. REPORT NUMBER
9. PERFORMING ORGANIZATION NAME AND ADDRESS U.S. Army Construction Engineering Research Lab. P.O. Box 4005 Champaign, IL 61820		8. CONTRACT OR GRANT NUMBER(s)
11. CONTROLLING OFFICE NAME AND ADDRESS		10. PROGRAM ELEMENT, PROJECT, TASK AREA & WORK UNIT NUMBERS 4A762720A896-A-034
14. MONITORING AGENCY NAME & ADDRESS (if different from Controlling Office)		12. REPORT DATE AUGUST 1982
		13. NUMBER OF PAGES 22
		15. SECURITY CLASS. (of this report)
		15a. DECLASSIFICATION/DOWNGRADING SCHEDULE
16. DISTRIBUTION STATEMENT (of this Report) Approved for public release; distribution unlimited.		
17. DISTRIBUTION STATEMENT (of the abstract entered in Block 20, if different from Report)		
18. SUPPLEMENTARY NOTES Copies are obtainable from the National Technical Information Service Springfield, VA 22151		
19. KEY WORDS (Continue on reverse side if necessary and identify by block number) Water pollution National Pollutant Discharge Elimination System management information system		
20. ABSTRACT (Continue on reverse side if necessary and identify by block number) The Clean Water Act of 1977 and Army Regulation 200-1 require Army installations to control the quality of their point-source wastewater effluents. Point-source discharges are controlled by National Pollutant Discharge Elimination System (NPDES) permits; each wastewater point discharging into a navigable waterway is regulated either by a Federal or State NPDES permit. The Department of the Army has been issued hundreds of NPDES permits.		

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

This report describes a pilot NPDES Permit Management System developed by the U.S. Army Construction Engineering Research Laboratory (CERL). This program allows the Army to retrieve from a central data base a permanent, continually updated inventory of the Army's wastewater effluent discharge self-monitoring information and associated NPDES permit data. This system also lets the Army aggregate, manipulate, and analyze the data base information. This report gives a brief background of the pilot system's development, suggests how the system can be used to help manage the Army's pollution abatement program, and gives detailed user instructions.

UNCLASSIFIED

SECURITY CLASSIFICATION OF THIS PAGE(When Data Entered)

FOREWORD

This study was sponsored by the Directorate of Military Programs, Office of the Chief of Engineers (OCE), under Project 4A762720A896. "Environmental Quality for Construction and Operation of Military Facilities"; Task A; Work Unit 034, "Hazardous/Toxic Materials Management System." LTC D. Gilson was the OCE Technical Monitor. The work was also funded in part by the Army Environmental Hygiene Agency under IAO AEHA 82-60.

The work was performed by the Environmental Division (EN) of the U.S. Army Construction Engineering Research Laboratory (CERL). This research was made possible through the efforts of OCE and Army Environmental Hygiene Agency personnel. Administrative support and counsel were provided by Dr. R. K. Jain, Chief of CERL-EN.

COL Louis J. Circeo is Commander and Director of CERL, and Dr. L. R. Shaffer is Technical Director.



Accession For	
NTIS GRA&I	<input checked="" type="checkbox"/>
DTIC TAB	<input type="checkbox"/>
Unannounced	<input type="checkbox"/>
Justification	
M.	
Distribution	
Availability Codes	
Dist	Avail and/or Specia
A	

CONTENTS

	Page
DD FORM 1473	1
FOREWORD	3
1 INTRODUCTION	5
Background	
Objective	
Approach	
Mode of Technology Transfer	
2 THE NPDES—OVERVIEW	6
3 THE PILOT NPDES PERMIT MANAGEMENT SYSTEM	6
The Data Base	
Retrieving Information From the Data Base	
Displaying Data	
Manipulating Data	
Other Features	
4 CONCLUSION	11
APPENDIX A: KEYWORD VALUES	12
APPENDIX B: SYNTAX GUIDE	18
APPENDIX C: LIST COMMAND CATEGORIES	19
APPENDIX D: SAMPLE OUTPUT	20
DISTRIBUTION	

THE NATIONAL POLLUTANT DISCHARGE ELIMINATION SYSTEM (NPDES) PERMIT MANAGEMENT SYSTEM: PILOT SYSTEM DESCRIPTION

1 INTRODUCTION

Background

The Clean Water Act of 1977 prohibits the discharge of pollutants from a point source into a receiving stream unless the discharge is authorized by the U.S. Environmental Protection Agency (USEPA) or the State EPA. Army regulation (AR) 200-1, *Environmental Protection and Enhancement*, requires Army installations to comply with these Federal and State regulations.¹

Point-source wastewater effluents are authorized by a National Pollutant Discharge Elimination System (NPDES) permit. This permit names the type and amount of pollutants that can be released from each point source. The holder of each permit also must submit, at specified intervals, self-monitoring reports which describe the quality of the effluent actually discharged.

A recent General Accounting Office study reported that 87 percent of municipal wastewater treatment plants are in violation of their NPDES permits.² Some 31 percent of those plants show serious, long-term violations which indicate overloaded conditions.

The Army's NPDES compliance record is much better. The latest year of record for one major command (MACOM) shows only 79 discharges in non-compliance out of 351 point sources regulated by NPDES permit. This represents just 22 percent non-compliance—four times better than the national average.

NPDES compliance is a nationwide problem because new pollution control facilities often are designed poorly, and because old facilities which cannot meet today's strict NPDES discharge limits are still in use.

¹ *Environmental Protection and Enhancement*, Army Regulation 200-1 (Department of the Army, 1982).

² *Costly Wastewater Plants Fail to Perform as Expected*, CE 0812-9, Report by the Comptroller General of the United States, CED 81-9 (General Accounting Office, November 14, 1980).

Most of the Army's NPDES compliance problems fall into this latter category. The Army has been issued hundreds of NPDES permits, many of which regulate trickling filter plants designed during World War II. Some of these plants may have to be upgraded to meet future permit requirements, either by retrofit (new construction), or by changing their process control. To insure the Army's limited construction and research money is spent where it will do the most good, the Army must find:

1. Which of its point-source discharge sites are in the most serious jeopardy of violating current or future NPDES limits.

2. Which sites could be made to comply with NPDES limits with only process control changes, rather than with costly new construction.

To do this, the Army managers who set pollution abatement priorities must have quick, easy access to a complete data base of Army NPDES permits and their associated self-monitoring reports. They also must be able to manipulate and analyze this data base.

An Army-wide NPDES permit data base and data management system could help managers at every level in the Army. At the installation level, the Directorate of Facilities Engineering (DFE) would have an easily accessible, readable operating log of the wastewater treatment processes at their installation. This log could be used to develop and analyze operational data needed to make changes in process control, build a case for requesting an exemption from NPDES discharge limits, or write a proposal for new facility construction. The log's historical data also could be used to support the Metcalf and Eddy RODA System, now being evaluated for Army use, which helps "fine-tune" a plant so it performs to its maximum capabilities.³

MACOMs could use the system to rank new construction requests related to pollution abatement.

Decision-makers in the Office of the Chief of Engineers (OCE) could use the system to find recurring or widespread problems at Army pollution abatement facilities, thus pinpointing those areas where research into improving pollution abatement facilities should be focused.

³ *RODA, Records and Operations Data Analysis* (Metcalf and Eddy, Inc., Boston, MA).

Installation, MACOM, OCE, and Department of the Army personnel could use the system to help assess the impact various levels of mobilization would have on pollution abatement facilities in their jurisdiction.

Objective

The objective of this work was to develop (1) a pilot data base of Army NPDES permits and self-monitoring reports, and (2) a computer-aided system to retrieve, aggregate, manipulate, and analyze data base information easily.

Approach

A limited data base containing only U.S. Army Training and Doctrine Command (TRADOC) NPDES permits and reports was assembled. System management data and summary requirements were collected from Headquarters TRADOC, Environmental Coordinators at several TRADOC installations, OCE, and the U.S. Army Environmental Hygiene Agency (USAEHA). An interactive pilot NPDES Permit Management System was then designed and programmed.

Mode of Technology Transfer

Technology transfer will be in accordance with AR 18-1, *Army Automation Management* (Department of the Army, 15 August 1980).

2 THE NPDES—OVERVIEW

The NPDES regulations regulate pollutant discharges in two ways:

1. Each discharge must be authorized by a permit. Figure 1 is a topical list of all information contained in an NPDES permit for USEPA Region IV.* All permits list discharge limits and monitoring requirements. That is, all permits control the rate at which various pollutants can be discharged, and set specific requirements for sampling and testing wastewater effluents to determine if discharge limits are being met (Figure 2).

2. Every generator of a permitted discharge must submit periodic, self-monitoring reports giving detailed information about the pollutant levels actually discharged during the time period covered by each report.

*The USEPA divides the United States into 10 management regions. Unfortunately, permits issued by these regions do not have a uniform format.

A sample Discharge Monitoring Report, EPA Form 3320-1, is shown in Figure 3. A permit's requirements are compared to the data in the self-monitoring report to determine whether a generator is complying with NPDES permit conditions.

3 THE PILOT NPDES PERMIT MANAGEMENT SYSTEM

The Data Base

An NPDES Permit Management System data base was assembled from information extracted from USEPA records of NPDES permits issued to TRADOC installations and associated TRADOC self-monitoring reports. This information fell into five groups:

1. Descriptive information. Each permit gives the name of the installation holding the permit, the NPDES permit number, a description of the type of discharge (e.g., washrack or sewage treatment plant), and the EPA region, watershed, State, county, and city in which the discharge occurs.

2. Event schedules. Each permit lists events and deadlines that must be met as the discharge is brought into compliance and maintained.

3. Effluent limitations. Each permit lists wastewater constituents (e.g., ammonia or organics) that must be monitored. Also listed are the maximum acceptable level of those constituents in the discharge, and how often and in what ways monitoring samples must be taken.

4. Current reports. These reports give the level of each wastewater constituent actually discharged during each reporting period.

5. Special information. Both permits and reports list notes, memos, special cases, and exceptions pertinent to each discharge.

Retrieving Information From the Data Base

To retrieve information from the pilot system's data base, the user must tell the system exactly what part of the data base he* is interested in reviewing.

*The male pronoun is used throughout this report to refer to both genders.

Name of Permittee:
 Application Number:
 Permit Number:
 Effective Date of Permit:
 Expiration Date of Permit:
 Permit Issued By:
 Location of Discharge:
 Name of Receiving Water:
 Classification of Receiving Water

Part I

- A. Effluent Limitations and Monitoring Requirements
 - 1. Period of Authorization for Discharge
 - 2. Effluent Limitations
 - 3. Sampling Point, Type, and Frequency
 - 4. Effluent-Influent Qualities Relationship To Be Satisfied
- B. Schedule of Compliance
- C. Monitoring and Reporting
 - 1. Representative Sampling
 - 2. Reporting
 - 3. Test Procedures
 - 4. Reporting Results
 - 5. Additional Monitoring by Permittee
 - 6. Records Retention
 - 7. Location of Sampling Points
 - 8. Flow Determination
 - 9. Substitution for BOD Tests

Part II

- A. Management Requirements (when the following occur)
 - 1. Change in Discharge
 - 2. Non-compliance
 - 3. Facilities Operation
 - 4. Adverse Impact
 - 5. Bypassing
 - 6. Removed Substances
 - 7. Power Failure
- B. Responsibilities
 - 1. Right of Entry
 - 2. Transfer of Ownership or Control
 - 3. Availability of Reports
 - 4. Permit Notification
 - 5. Toxic Pollutants
 - 6. Civil and Criminal Liability
 - 7. Oil and Hazardous Substance Liability
 - 8. State Laws
 - 9. Property Rights
 - 10. Severability

Part III--Other Requirements

- A. Definitions
 - 1. Discharge Limitations and Monitoring Requirements
 - a. Flow
 - b. Concentration and Any Value Other Than Fecal Coliform Bacteria, Flow, or Loading
 - c. Fecal Coliform
 - d. Loading
 - e. Other Definitions
 - 2. Discharge Sources
 - a. Potable and Industrial Water Treatment Facilities
 - b. Cooling Systems
 - c. Boilers
 - d. Vehicle and Equipment Cleaning Facilities
 - e. Painting and Corrosion Control Facilities
 - f. Petroleum Storage and Handling Areas
 - g. Vehicle and Equipment Maintenance Facilities
 - h. Battery Rework Facilities
 - i. Photographic Laboratories
 - j. Fire Fighter Training Areas
- B. Additional Permitted Discharges
 - 1. Applicability
 - 2. General Conditions
 - 3. Interim Discharge Limitations and Monitoring Requirements
 - 4. Final Discharge Limitations and Monitoring Requirements
 - a. General Requirements
 - b. Special Conditions
 - (1) Discharge Less Than 2000 gpd
 - (2) Discharges to Storm Sewers
 - c. Discharge Limitations and Monitoring Requirements
 - (1) Potable and Industrial Water Treatment Facilities Including Filters, Softeners, and Demineralizers.
 - (2) Cooling Water, Cooling Tower Blowdown, and Cleaning Wastes
 - (3) Boiler Blowdown
 - (4) Vehicle Equipment Cleaning Facilities
 - (5) Painting and Corrosion Control Facilities
 - (6) Vehicle and Equipment Maintenance and Storage
 - (7) Petroleum, Oil, and Lubricant (POL) Storage Handling Areas
 - (8) Battery Maintenance
 - (9) Photographic Laboratories
 - (10) Fire Fighter Training Areas
 - (11) Swimming Pools
 - (12) Storm Sewers
 - 5. Schedule of Compliance

Requirements for Adjudicatory Hearing Request

Figure 1. Topical listing from an NPDES permit for USEPA Region IV.

DISCHARGE LIMITS

EFFLUENT CHARACTERISTICS	Concentration in mg/l		kg/day (lb/day)		Minimum Monitoring Requirements	
	Monthly Average	Weekly Average	Monthly Average	Weekly Average	Measurement Frequency	Sample Type
Biochemical oxygen demand (5-day)	30*	45	70 (150)		Twice weekly	24-hr composite
Suspended solids	30*	45	80 (180)		Twice weekly	24-hr composite
pH (standard units)	6.0-9.0 (Not to be averaged)				Twice weekly	Grab
Fecal coliform (organisms/100 ml)	200	400	—	—	Twice weekly	Grab
Flow (mgd)	—	—	—	—	Daily	Recording

*The arithmetic mean of the values for effluent samples measuring biochemical oxygen demand (5-day) and suspended solids collected in a period of 30 consecutive days shall not exceed 15 percent of the arithmetic mean of the values for influent samples collected at approximately the same times during the same period (minimum: 85 percent removal).

Figure 2. Discharge limits and monitoring requirements.

To do this, the user selects commands that operate on valid keywords. Appendix A lists the pilot system's valid keywords and keyword categories. The system's selection commands are:

find (keyword)
and (keyword)
or (keyword)
except (keyword)

The "find" command selects from the total data base *only* those data records that contain the specified keyword. The "and," "or," and "except" commands work according to their logical meaning to enlarge or further limit the size of the data base section focused on by the selection command. This means the user can ask the system to retrieve a specific permit, retrieve and group all permits in a user-specified place, or retrieve and group all permits regulating one or more specified pollutants. For example, the command

find oil and grease

selects those permits that regulate the discharge of oil and grease. If the user then uses the command "and" with the keyword "ammonia-n"

and ammonia-n

the system *limits* the set of retrieved permits to those that regulate both oil and grease and ammonia-n. The series of commands

find oil and grease
or ammonia
and Region 4

tells the system to retrieve those permits that regulate discharges in USEPA Region IV which limit either oil and grease or ammonia-n. Such a subset of retrieved permits is called a "current list" by the system.

Assigned-Value Keywords

The user can control system retrieval even further by using special keywords called "assigned-value" keywords. These keywords are used to find the compliance status of each permit (based on the most recent self-monitoring report contained in the data base). They are called assigned-value keywords because their definition (value) can change every time the data base is updated. Appendix A lists the system's assigned-value keywords and their meanings. Assigned-value keywords let the user focus on only those discharges having some kind of problem meeting their permit requirements.

Facility or discharge location

NAME
STREET
CITY
STATE / ZIP

STATE / ZIP CODE

Telephone number (including area code)

(b-3)	(b-6)	(b-7)(D)
87	PERMIT NUMBER	DOS

07-104

REPORTING PERIOD: FROM

120-11	120-22	120-23	YEAR	MO	DAY

to

120-27	120-28	120-31	YEAR	MO	DAY

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	98	99	100
---	---	---	---	---	---	---	---	---	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	----	-----

PARAMETER	QUANTITY (10 comp. only) (10-10)				CONCENTRATION (10 comp. only) (10-10)				FREQUENCY OF ANALYSIS (10-10)				SAMPLE TYPE
	MINIMUM		MAXIMUM		MINIMUM		MAXIMUM		MINIMUM		MAXIMUM		
	AVERAGE	UNITS	AVERAGE	UNITS	AVERAGE	UNITS	AVERAGE	UNITS	AVERAGE	UNITS	AVERAGE	UNITS	
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION													
REPORTED													
PERMIT CONDITION		</											

Figure 3. EPA Form 3320-1.

Effluent and Event Category Keywords

When a selection command having a keyword value from the "effluent" or "event" categories is used, the pilot system will ask the user to give it more information. For example:

1. When given a keyword from the effluent category, the system will ask "noncompliance?" If the user answers "yes," the system will list point sources for which the effluent has exceeded its permit limits. If the user answers "no," the system will list discharges for which the specified effluent constituent is being monitored as a permit requirement, regardless of compliance status.

2. When given a selection command having a keyword from the event category, the system will ask "noncompliance?" If the user answers "yes," the system will list only those events which are in non-compliance. If the user answers "no," the system will list any discharge for which the permit contains the specified event. The user also will be asked to give start and end dates; this allows the system to search for and retrieve an event which occurred within a given time span.

Restore Command

The "restore" command revokes the last selection command given. This command is used to correct input mistakes.

Appendix B is a syntax guide for the pilot system's commands. It also gives detailed descriptions of the selection commands.

Displaying Data

After the selection commands have isolated that part of the data base which the user wants to see, he uses the list and show commands to print and examine that information. The "list" command is used with a keyword category name or names. It displays the keyword values associated with the permits in the part of the data base chosen by the selection commands (i.e., the current list). The list command cannot be used to display information from the events or assigned-value keyword categories. (Appendix C lists categories that may be displayed.)

For example, if the user inputs

find noncompliance
list installation, descriptor, effluent

the system would list those installations in noncompliance with their NPDES permit, the type of discharge (e.g., washrack, cooling tower, or sewage lagoon), and the pollutant(s) exceeding the permitted level.

The "show" command, when used alone, displays the record number, permit number, source number, and facility name of each point source on the system's current list. When the show command is used with one or more of the options described below, data associated with that option is printed out. The options are:

1. keys: used to display the keyword values associated with each point source in the current list.

2. events: used to display the event schedules for each point source in the current list.

3. limits: used to display the effluent limits for each point source in the current list.

4. reports: used to display the most current set of monitoring reports submitted for the point sources in the current list.

5. notes: used to display the notes sections for each point source in the current list.

The syntax guide in Appendix B further defines the use of display commands.

Manipulating Data

At present, the pilot system has three commands for extracting and combining data base information.

The "summary" command creates a file of NPDES permit conditions which includes permit number, expiration date, discharge description, effluent limits, and sampling requirements. The summary command can be invoked on the whole data base or on that part of the data base isolated by the selection commands.

The "find report due" command is used to find out when the next self-monitoring reports are due. The system asks the user for the start and end dates of interest, then retrieves those permits that have a report due within that period. The list and show commands then can be used to generate further information.

The "letter" command creates a file of all permit violations for all point sources in the system's current

list. Permit violations include non-compliance with effluent limits, missing or late reports, late events, or missing data.

Appendix D contains samples of the information generated by the summary, find report due, and letter commands.

Other Features

The pilot system has an interactive data input subroutine which lets installations enter self-monitoring report data into the data base. This subroutine can be invoked by narrowing the current list to one point source, and typing the command "reports." The subroutine then will ask the user for all of the information about that point source, and automatically complete the self-monitoring report.

The "save file" and "restore file" commands can be used when the same set of permits has to be retrieved more than once.

4 CONCLUSION

This report has described a pilot data base and a data management system developed for Army NPDES permits and self-monitoring reports. This system allows a user to easily retrieve, aggregate, manipulate, and analyze effluent characteristics and other technical information contained in NPDES records.

APPENDIX A: KEYWORD VALUES

Part 1:

Category name: region

Keyword values:

region 2
region 3
region 4
region 5
region 6
region 7

Part 2:

Category name: state

Keyword values:

alabama
arkansas
florida
georgia
indiana
kansas
kentucky
mississippi
missouri
new jersey
ohio
oklahoma
pennsylvania
south carolina
texas
virginia

Part 3:

Category name: county

Keyword values:

adams
belmont
calhoun
calhoun
caroline
chattahoochee
comanche
covington
dale
essex
etowah
fairfax
floyd

forrest
henry
hinds
jefferson
kenton
lauderdale county
lee
leon
lincoln lumpkin
madison
n county
nelson
nottoway
palo pinto
pike
pulaski
richland
richmond
sebastian
tift
waynesboro

Part 4:

Category name: city

Keyword values:

abbeyville
akron
anniston
bardstown
bellaire
blackstone
bowling green
brookhaven
bryan
cadiz
canton
clarksdale
delaware
fort thomas
freemont
gadSDen
hattiesburg
huntsville
jackson
kenton
kings mills
louisville
mahwah
mansfield
marion
meridian
n city

natchez
opp
passover
pedricktown
possum kingdom lake
rome
sharonville
tallahassee
tifton
troy
tupelo
warrenville
waynesboro
wooster

Part 5:

Category name: permit

Keyword values:

a10002178
a10003808
a10025336
a10026751
a10026760
a10026778
a10027073
a10027111
a10027120
ar0034452
fl0036099
ga0000973
ga0006484
ga0027316
ga0027383
ga0027405
in0033456
ks0002615
ky0002917
ky0042676
ky0042684
ky0042692
ky0042706
mo0029742
mo0029751
mo0029769
mo0029777
mo0058068
mo0061522
ms0040398
ms0040461
ms0040479
ms0040487

ms0040495
ms0040509
ms0040517
ms0040576
ms0040631
nj0004855
nj0021498
nj0021938
nj0024635
oh0110264
oh0110272
oh0110299
oh0110302
oh0110329
oh0110337
oh0110345
oh0110353
oh0110361
oh0110370
oh0110388
oh0110396
oh0110400
oh0110418
ok0002216
ok0002224
ok0021385
ok0021407
ok0030295
ok0030317
pa0010251
so0003786
va0005827
va0005924
va0025186
va0025216
va0026654
va0029904
va0029912
va0031071
va0032034

Part 6:

Category name: source

Keyword values:

001
002
003
004
005
006
007

008
009
010
011
012

Part 7:

Category name: descriptor

Keyword values:

air conditioning cooling tower blowdown
boiler blowdown
cooling tower
domestic wastewater treatment plants
firefighter training area
material storage run-off
mobile water treatment plant
n descriptor
pot storage area
sewage lagoon
swimming pool backwash
washrack
water treatment plant backwash

Part 8:

Category name: watershed

Keyword values:

beechfork tributary
big miami river
big niney river
black lake drainage canal
bogue chitto river
branch of mill creek
brick kiln creek
brooking mill creek
butler creek
cache creek
cane creek
cane creek tributary
cave creek
chattahoochee river
choctahatchee river
clay bank creek
coosa river tributary
crosswicks creek
deer creek
delaware river
dilly branch
dothard creek
dry creek
east cache creek
etowah river

fall creek
gill creek
harrand creek
hipps folly
horseley creek
hurricane creek
indian creek
james river
jones branch
killbuck river
killbuck river via storm sewer
king's creek tributary
lake elmer thomas
lake of the ozarks
leaf river
letort spring
little miami river
little vache grasse creek
maracossic creek
maumee river via storm drain
mill creek
n watershed
new river
ohio river
okabibee creek
oleatangi river via storm drain
otter creek
passaic river
pearl river tributary
possum kingdom lake
potomac river
quarry creek ramapoo river
rappahannock river
reo river
roubidioux creek
roubidoux creek
sandusky river
scioto river
smith branch
south run
spirit creek
st. catherine creek
storm drainage system of tallahassee, florida
storm sewer
tennessee river
town creek
tuscarawas river
unnamed tributary
unnamed tributary of ohio river
unnamed tributary of the ohio river
unnamed tributary via storm drain
unnamed tributary via storm sewer
van's mills creek

walnut creek
west branch ware creek
wolf creek tributary

Part 9:

Category name: facility

Keyword values:

abbeyville usar center
anniston usar center
belmont county usar memorial center
carlisle barracks
clarksdale usar center
conway usar center
delaware memorial usar centers
fort a.p. hill
fort belvoir
fort benjamin harrison
fort benning
fort chaffee
fort dix
fort eustis
fort gordon
fort jackson
fort knox
fort leavenworth
fort leonard wood
fort mcclellan
fort monroe
fort pickett
fort rucker
fort sill
fort thomas usar center
franklin lakes family housing complex
gadsden usar center
harold b. durham jr. usar center
hastings usar center
hattiesburg usar center
hayes usar center
huisman usar center
huntsville usar center
jackson usar center no. 1
jackson usar center no. 2
kings mill training facility (usar)
knight usar center
livingston family housing complex
louisville no. 1 usar center
louisville no. 2 usar center
meridian usar center
natchez usar center
opp usar center
outcalt usar center
parrott usar center

pedricktown support center
pennington usar center
possum lake usar center
rome usar center
scouten usar center
talmadge whedden usar center
troy memorial usar center
troy usar center
tupelo usar center
ward memorial usar center
waynesboro usar center
woodford usar center

Part 10:

Category name: installation

Keyword values:

carlisle barracks
fort a.p. hill
fort belvoir
fort benjamin harrison
fort benning
fort dix
fort eustis
fort gordon
fort jackson
fort knox
fort leavenworth
fort leonard wood
fort mcclellan
fort monroe
fort pickett
fort rucker
fort sill

Part 11:

Category name: command

Keyword values:

tradoc

Part 12:

Category name: class

Keyword values:

major
minor

Part 13:

Category name: instal__type

Keyword values:

active
reserve

Part 14:

Category name: effluent

Keyword values:

ammonia-n
bod5-%removal
bod5
chromium
cod
copper
dissolved oxygen
fecal coliform
flow
iron
manganese
oil and grease
ph
phosphorus
residual chlorine
settleable solids
ss
temperature
total n
tss-%removal
tss
unoxidized n
zinc

Part 16:

NPDES PSM—assigned value keywords:

all
event exceptions
late events
effluent exceptions
no reports
late reports
missing data
noncompliance

Meanings

all: every record in the data base.

event exceptions: records whose event schedules are modified by further conditions explained in the notes section of the data base.

late events: records whose event schedules contain late events.

effluent exceptions: records whose effluent limits are modified by conditions explained in the notes sections of the data base.

no reports: records which have no self-monitoring reports on file.

late reports: records which have no self-monitoring reports on file for the latest scheduled reporting period.

missing data: records whose self-monitoring reports have missing data.

noncompliance: records whose self-monitoring reports have effluents in noncompliance with permit limits.

Part 15:

Category name: event

Keyword values:

approval of funding
attain final effluent limitations
attain operational level
attainment of final effluent limitations
attainment of operational level
award of contract
begin construction
commence construction
commencement of construction for upgrading facilities
commencement of construction for upgrading facility
commencement of construction
complete construction for upgrading facilities
complete construction of the required facilities to achieve compliance
complete construction of upgraded facility
complete final plans and specifications
complete operation and maintenance program
completion of construction by
completion of final plans for achieving compliance
completion of plans
completion of preliminary plans
construction begins
construction complete
effective data
expiration date for interim limitations
expiration date
expiration of interim effluent limitations
final design
final funding
final plans completed
first discharge monitoring report due operational by
progress report on preliminary plans
reapply for permit

report of construction progress
report of funding progress
report of progress for achieving compliance
report of progress
report on construction progress by
submit a report of progress on construction of
facilities

submit final engineering report
submit listing of existing sources
submit preliminary engineering report
submit progress report to regional administrator
submit schedule of actions to achieve compliance

APPENDIX B: SYNTAX GUIDE

find <keyword value>
or <keyword value>
and <keyword value>
except <keyword value>
list <category name>
show <option name>
save <filename>

restore <filename>
help <command name>
letter <filename>
summary <filename>
reports
quit

APPENDIX C: LIST COMMAND CATEGORIES

The list command operates on the following keyword categories:

installation
state
county
city
permit
source
descriptor
watershed
facility
command
effluent

APPENDIX D: SAMPLE OUTPUT

Sample Output: Final report due command

What next?
find report due
enter starting date: 82/01/01
enter ending date: 82/01/31
94 found

What next?
and noncompliance
25 found
22 in current list

What next?
list installation permit
fort a.p. hill (2)
permit: va0031071

fort belvoir (2)
permit: va0025186

fort benjamin harrison (1)
permit: in0033456

fort benning (3)
permit: ga0000973

fort dix (1)
permit: nj0004855

fort knox (1)
permit: ky0002917

fort mccllellan (3)
permit: ms0040576

fort monroe (1)
permit: va0005924

fort pickett (1)
permit: va0245194

fort rucker (5)
permit: al0002178

fort sill (2)
permit: ar0034452

Sample Output: letter command

tupelo usar center (fort mccllellan)
ms04057001

For the report covering 79/04/01 to 79/07/01

oil and grease
reported average concentration 17 mg/L;
requirement is 10
reported maximum concentration 17 mg/L;
requirement is 15

ph:
reported minimum concentration 5.6 stunit;
requirement is 6.0

anniston usar center (fort mccllellan)
al0027120 001

For the report covering 79/04/01 to 79/07/01

tss:
reported average concentration 57 mg/L;
requirement is 25
reported maximum concentration 57 mg/L;
requirement is 40

oil and grease
reported average concentration 105 mg/L;
requirement is 10
reported maximum concentration 105 mg/L;
requirement is 15

fort rucker (fort rucker)
ms0040495 001

jackson usar center no. 2 (fort rucker)
ms0040461 There are no self-monitoring reports
on file.

For the report covering 79/4/1/ to 79/6/30

oil and grease
reported average concentration 85 mg/L;
requirement is 10
reported maximum concentration 85 mg/L;
requirement is 15

tss:
reported average concentration 364 mg/L;
requirement is 25
reported maximum concentration 364 mg/L;
requirement is 40

ph:
reported minimum concentration 5.6 stunit;
requirement is 6.0

CERL DISTRIBUTION

Chief of Engineers
ATTN: Tech Monitor
ATTN: DAEN-AS1-L (2)
ATTN: DAEN-CCP
ATTN: DAEN-CW
ATTN: DAEN-CWE
ATTN: DAEN-CUN-R
ATTN: DAEN-CUN
ATTN: DAEN-CWP
ATTN: DAEN-MP
ATTN: DAEN-MPC
ATTN: DAEN-MPE
ATTN: DAEN-MPO
ATTN: DAEN-MPE-A
ATTN: DAEN-ED
ATTN: DAEN-RDC
ATTN: DAEN-RDM
ATTN: DAEN-RH
ATTN: DAEN-ZC
ATTN: DAEN-ZCH
ATTN: DAEN-ZCI
ATTN: DAEN-ZCH

FESA, ATTN: Library 22060

FESA, ATTN: DET III 79906

US Army Engineer Districts

ATTN: Library
Alaska 99501
Al Batin 09616
Albuquerque 87103
Baltimore 21203
Buffalo 14207
Charleston 29402
Chicago 60604
Detroit 48231
Far East 96301
Fort Worth 76102
Galveston 77550
Huntington 25721
Jacksonville 32232
Japan 96343
Kansas City 64106
Little Rock 72203
Los Angeles 90053
Louisville 40201
Memphis 38103
Mobile 36628
Nashville 37202
New Orleans 70160
New York 10007
Norfolk 23510
Omaha 68102
Philadelphia 19106
Pittsburgh 15222
Portland 97208
Riyadh 09038
Rock Island 61201
Sacramento 95814
San Francisco 94105
Savannah 31402
Seattle 98124
St. Louis 63101
St. Paul 55101
Tulsa 74102
Vicksburg 39180
Walla Walla 99362
Wilmington 28401

US Army Engineer Divisions

ATTN: Library
Europe 09757
Huntsville 35807
Lower Mississippi Valley 39180
Middle East 09038
Middle East (Near) 22601
Missouri River 68101
New England 02154
North Atlantic 10007
North Central 60605
North Pacific 97208
Ohio River 45201
Pacific Ocean 96858
South Atlantic 30303
South Pacific 94111
Southwestern 73202

US Army Europe

HQ, 7th Army Training Command 09114
ATTN: AETTC-DEM (5)
Hq, 7th Army OMC/Eng. 09403
ATTN: AEAEN-BH (4)
V. Corps 09079
ATTN: ARVDBH (5)
VII. Corps 09154
ATTN: AETSDH (5)
21st Support Command 09325
ATTN: AEAEN (5)
Berlin 09742
ATTN: AEAH-BH (2)
Southern European Task Force 09168
ATTN: AEAH-BH (3)
Installation Support Activity 09403
ATTN: AEAH-BH

8th USA, Korea

ATTN: EAFE-B 96301
ATTN: EAFE-Y 96358
ATTN: EAFE-ID 96224
ATTN: EAFE-WH 96208

8th USA, Korea

ATTN: EAFE-B 96271
ATTN: EAFE-P 96259
ATTN: EAFE-T 96212

BOK/US Combined Forces Command 96301
ATTN: EUSA-BMC-CFC/Eng

USA Japan (USARJ)

Ch, PE Div, AJEN-PE 96343
Fac Engr (Monchu) 96343
Fac Engr (Okinau) 96331

Rocky Mt. Arsenal, SAREM-IS 80022

Area Engineer, AEDC-Area Office
Arnold Air Force Station, TN 37389

Western Area Office, CE
Vandenberg AFB, CA 93437

416th Engineer Command 60623
ATTN: Facilities Engineer

US Military Academy 10996

ATTN: Facilities Engineer
ATTN: Dept of Geography &
Computer Science
ATTN: DSCPEH/MAEN-A

Engr. Studies Center 20315
ATTN: Library

AMIRC, ATTN: DRUM-WE 02172

USA ARCON 61299

ATTN: DRCS-R1-1
ATTN: DRSA-R1-5

DARCON - Dir., Inst., & Svcs.

ATTN: Facilities Engineer
ARRADCON 07801
Aberdeen Proving Ground 21005
Army Matls. and Mechanics Res. Ctr. 78419
Corpus Christi Army Depot 78419
Harry Diamond Laboratories 20783
Dugway Proving Ground 84022
Jefferson Proving Ground 47250
Fort Monmouth 07703
Letterkenny Army Depot 17201
Natick R&D Ctr. 01760
New Cumberland Army Depot 17070
Pueblo Army Depot 81001
Red River Army Depot 75501
Redstone Arsenal 35809
Rock Island Arsenal 61299
Savanna Army Depot 61074
Sharpe Army Depot 95331
Seneca Army Depot 14541
Tobyhanna Army Depot 18466
Tooele Army Depot 84074
Watervliet Arsenal 12189
Yuma Proving Ground 85364
White Sands Missile Range 88002

DLA ATTN: DLA-WI 22314

FORSCOM

FORSCOM Engineer, ATTN: AFEN-PE
ATTN: Facilities Engineer
Fort Buchanan 00934
Fort Bragg 28307
Fort Campbell 42223
Fort Carson 80913
Fort Devens 01433
Fort Drum 13601
Fort Hood 76544
Fort Indiantown Gap 17003
Fort Irwin 92311
Fort Sam Houston 78234
Fort Lewis 98433
Fort McCoy 54656
Fort McPherson 30330
Fort George G. Meade 20755
Fort Ord 93941
Fort Polk 71459
Fort Richardson 99505
Fort Riley 66442
Presidio of San Francisco 94129
Fort Sheridan 60037
Fort Stewart 31313
Fort Vainwright 99780
Vancouver Bks. 98660

BSC

ATTN: HSLD-Y 78234
ATTN: Facilities Engineer
Pittsmons AMC 80240
Walter Reed AMC 20012

INSCOM - Ch, Incl. Div.

ATTN: Facilities Engineer
Arlington Hall Station (2) 22212
Vint Hill Farms Station 22186

NSW

ATTN: Facilities Engineer
Cameron Station 22314
Fort Lesley J. McNair 20319
Fort Myer 22211

NTWC

ATTN: NTWC-SA 20315
ATTN: Facilities Engineer
Oakland Army Base 94626
Bayonne MOT 07002
Sunny Point MOT 28461

KARADCON, ATTN: DRDMA-F 07160

TARCON, Fac. Div. 48090

TECON, ATTN: DRSTE-LG-F 21005

TRADOC

HQ, TRADOC, ATTN: ATEN-PE
ATTN: Facilities Engineer
Fort Belvoir 22060
Fort Benning 31905
Fort Bliss 79916
Carlisle Barracks 17013
Fort Chaffee 72902
Fort Dix 08640
Fort Eustis 23604
Fort Gordon 30905
Fort Hamilton 11252
Fort Benjamin Harrison 46216
Fort Jackson 29207
Fort Knox 40121
Fort Leavenworth 66027
Fort Lee 23801
Fort McClellan 36205
Fort Monroe 23651
Fort Rucker 36362
Fort Sill 73503
Fort Leonard Wood 65473

TSARCON, ATTN: STAS-F 63120

USACC

ATTN: Facilities Engineer
Fort Huachuca 85613
Fort Ritchie 21719

WESTCON

ATTN: Facilities Engineer
Fort Shafter 96858

SHAPE 09055

ATTN: Survivability Section, CCM-OPS
Infrastructure Branch, LANDA

HQ USEUCOM 09128

ATTN: ECI 4/7-LOR

Fort Belvoir, VA 22060

ATTN: ATZA-DTE-EM

ATTN: ATZA-DTE-SM

ATTN: ATZA-PE

ATTN: Engr. Library

ATTN: Canadian Liaison Office (2)

ATTN: INR Library

Cold Regions Research Engineering Lab 01755

ATTN: Library

ETL, ATTN: Library 22060

Waterways Experiment Station 39180

ATTN: Library

HQ, XVIII Airborne Corps and 28307

Ft. Bragg

ATTN: AFIA-PE-EE

Chanute AFB, IL 61868

3345 CES/DE, Stop 27

Morton AFB 92409

ATTN: AFPRC-WX/DEE

Tyndall AFB, FL 32403

AFESC/Engineering & Service Lab

NAFEC

ATTN: RDT&E Liaison Office
Atlantic Division 23511
Chesapeake Division 20374
Southern Division 29411
Pacific Division 96860
Northern Division 19112
Western Division 64066
ATTN: Sr. Tech. FAC-OST 22332
ATTN: Asst. CDR R&D, PAC-OS 22332

NCEL 93041

ATTN: Library (Code LORA)

Defense Technical Info. Center 22314

ATTN: DDA (12)

Engineering Societies Library 10017

New York, NY

National Guard Bureau 20310

Installation Division

US Government Printing Office 22304

Receiving Section/Depository Copies (2)

ENS Team Distribution

Chief of Engineers

ATTN: DAEN-MPO-B
ATTN: DAEN-MPO-U
ATTN: DAEN-MPR
ATTN: DAEN-MPZ-A

US Army Engineer District

New York 10007
ATTN: Chief, WAMEN-E
ATTN: Chief, Design Br.
Pittsburgh 15222
ATTN: Chief, Engr Div
Philadelphia 19106
ATTN: Chief, WAPEN-E
Baltimore 21203
ATTN: Chief, Engr Div
Norfolk 23510
ATTN: Chief, WAOEN-R
Huntington 25721
ATTN: Chief, ORMED-P
Wilmington 28401
ATTN: Chief, SAWEN-PP
ATTN: Chief, SAWEN-PM
ATTN: Chief, SAWEN-E
Charleston 29402
ATTN: Chief, Engr Div
Savannah 31402
ATTN: Chief, SASAS-L
Jacksonville 32232
ATTN: Env. Res. Br.
Nashville 37202
ATTN: Chief, ORMED-P
Memphis 38103
ATTN: Chief, LMED-PR
Vicksburg 39180
ATTN: Chief, Engr Div
Louisville 40201
ATTN: Chief, Engr Div
St. Paul 55101
ATTN: Chief, ED-ER
Chicago 60604
ATTN: Chief, MCCPD-ER
ATTN: Chief, MCCPE-PES
St. Louis 63101
ATTN: Chief, ED-B
Kansas City 64106
ATTN: Chief, Engr Div
Omaha 68102
ATTN: Chief, Engr Div
Little Rock 72203
ATTN: Chief, Engr Div
Tulsa 74102
ATTN: Chief, Engr Div
Fort Worth 76102
ATTN: Chief, SMFED-PR
ATTN: Chief, SMFED-F
Galveston 77550
ATTN: Chief, SWGAS-L
ATTN: Chief, SWGCO-M
Albuquerque 87103
ATTN: Chief, Engr Div
Los Angeles 90053
ATTN: Chief, SPLED-E
San Francisco 94105
ATTN: Chief, Engr Div
Sacramento 95814
ATTN: Chief, SPKED-D
Far East 96301
ATTN: Chief, Engr Div
Seattle 98124
ATTN: Chief, NPSEN-PL-WC
ATTN: Chief, NPSEN-PL-ER
ATTN: Chief, NPSEN-PL-BP
Walla Walla 99362
ATTN: Chief, Engr Div
Alaska 99501
ATTN: Chief, NPASA-R

US Army Engineer Division

New England 02154
ATTN: Laboratory
ATTN: Chief, MEDED-E
South Atlantic 30303
ATTN: Chief, SAGEN-E

US Army Engineer Division

Huntsville 35807
ATTN: Chief, HMDED-CS
ATTN: Chief, HMDED-M
Lower Mississippi Valley 39180
ATTN: Chief, PD-R
Ohio River 45201
ATTN: Chief, Engr Div
North Central 60605
ATTN: Chief, Engr. Planning Br.
Southwestern 75202
ATTN: Chief, SWDCO-O
South Pacific 94111
ATTN: Laboratory
Pacific Ocean 96858
ATTN: Chief, Engr Div
ATTN: Chief, PODED-P
North Pacific 97208
ATTN: Laboratory
ATTN: Chief, Engr Div

5th US Army 78234

ATTN: AKFB-LG-E

6th US Army 94129

ATTN: AFKC-EN

7th US Army 09407

ATTN: AETTM-HRD-END

USA ARRADCOM

ATTN: DRDAR-LCA-OK

West Point, NY 10996

ATTN: Dept of Mechanics
ATTN: Library

Ft. Belvoir, VA 22060

ATTN: Learning Resources Center
ATTN: ATSE-TD-TL (2)
ATTN: British Liaison Officer (5)

Ft. Clayton Canal Zone 34004

ATTN: DFAE

Ft. Leavenworth, KS 66027

ATTN: ATZLCA-SA

Ft. Lee, VA 23801

ATTN: DRXMC-D (2)

Ft. McPherson, GA 30330

ATTN: AFEN-CD

Ft. Monroe, VA 23651

ATTN: ATEN-AD (3)
ATTN: ATEN-FE-E

Aberdeen Proving Ground, MD 21005

ATTN: AMXHE

Naval Facilities Engr Command 22332

ATTN: Code 04

US Naval Oceanographic Office 39522

ATTN: Library

Port Hueneme, CA 93043

ATTN: Merrill Library

Kirtland AFB, NM 87117

ATTN: DEP

Little Rock AFB 72076

ATTN: 314/DEEE

Patrick AFB, FL 32925

ATTN: XRU

AF/RDXT

WASH DC 20330

Tinker AFB, OK 73145

2854 ABG/DEEE

Tyndall AFB, FL 32403

AFESC/PRT

Building Research Advisory Board 20418

Dept. of Transportation

Tallahassee, FL 32304

Dept. of Transportation Library 20590

Transportation Research Board 20418

Airports and Const. Services Dir.

Ottawa, Ontario, Canada K1A 0N5

National Defense Headquarters

Ottawa, Ontario, Canada K1A 0K2

95

2-82

Messenger, Manette

The National Pollutant Discharge Elimination System (NPDES) Permit
Management System: Pilot System Description / by M. Messenger ... (et al.)
— Champaign, IL ; Construction Engineering Research Laboratory ; available
from NTIS, 1982.

22 p. (Technical Report / Construction Engineering Research Laboratory ;
N-133.)

1. Water - pollutant - point source identification. 2. Management
information systems. I. Messenger Manette II. Scarpetta, Veda III. Corbin,
Calvin C. IV. Sandy, John T. V. Smith, Edgar D. VI. Webster, Ronald
Dwight VII. Series ; Technical report (Construction Engineering Research
Laboratory (U.S.)) ; N-133.

DATE
ILMEI
-8